

Appendix J

North Bend Gravel Operation Recreation Technical Report

NORTH BEND GRAVEL OPERATION

RECREATION

TECHNICAL REPORT

For

KING COUNTY

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1 EXISTING CONDITIONS

The area offers year-round opportunities for hiking and climbing, bicycling, camping, fishing, picnicking, equestrian activities, river access and boating, and experiencing panoramic views and historic sites (including a railroad tour). During the winter, backcountry skiing, resort skiing, snowshoeing, snowmobiling, and a holiday season railroad tour are also available. Table 1 below lists existing recreational facilities located in the vicinity of the proposed project (generally within a 5 mile radius). Figure 1 provides an illustration of the primary federal and state recreational areas in the site vicinity. A more detailed discussion of recreational facilities in the area is provided below.

The project sites are currently owned by the Weyerhaeuser Company and have been managed for timber production and mineral extraction. A system of forest roads was developed on the property for timber harvest activity and is kept gated to discourage public access. No recreational uses are authorized on either of the sites, although some unauthorized hiking, hunting and shooting occurs.

1.1 RECREATIONAL FEATURES IN THE SITE VICINITY

The Upper Snoqualmie Valley provides for accessible and extensive outdoor park, recreation and open space opportunities. The North Bend area serves as a major rest stop for Puget Sound residents and tourists traveling in the I-90 corridor and to recreational sites in the area. Recreational uses in the Upper Snoqualmie Valley include hiking and climbing, biking, camping, water sports, skiing, hunting and fishing.

The Upper And Lower Sites are situated between the Middle Fork and South Fork of the Snoqualmie River (Upper Snoqualmie Valley) in eastern King County. The lower site is located on Southeast 146th Street (Grouse Ridge Access Road) at generally the same elevation as the City of North Bend, and the upper site is located on Grouse Ridge Road at an elevation of approximately 1,500 feet. Both sites are located within the Interstate-90 corridor.

The primary recreational facilities in the vicinity of Grouse Ridge are managed by the US Forest Service, Washington State Parks and Recreation Commission, Washington Department of Natural Resources, King County and the City of North Bend. Below is a brief discussion of the public facilities in the area (by jurisdiction), and the level of recreational use at each area if available.

Figure 1. Recreation Areas in the Site Vicinity

Table 1. Existing Recreational Facilities

Park/Recreation Facility	Location	Size (acres)	Amenities
Federal			
Mt. Baker/Snoqualmie National Forest/Alpine Lakes Wilderness	East of North Bend, to the north and south of I-90	360,000	200 miles of trails, 4 private alpine ski areas, nordic ski area, primitive campgrounds, working forest
Washington State			
Olallie State Park/Twin Falls Natural Area	5 miles southeast of North Bend, south of I-90 (Exit 34)	540	3.2 miles of moderate trails, 0.5 mile interpretive trail, river viewing (4 miles of river front), kayaking, swimming, fishing, rock climbing, bird watching, picnic area, parking; the area includes the Snoqualmie Pass Wagon Road Heritage Area and Garcia Recreation Area
Iron Horse State Park/John Wayne Trail	Trail begins near North Bend, follows south side of I-90 to Thorp	1,612 (67 miles)	Developed trail includes hiking, mountain biking, equestrian uses, facilities, dog sledding and cross-country skiing; other activities include bird watching, picnic areas, developed trail heads
Mount Washington Trail	Access trail system from John Wayne Trail/Rattlesnake Lake	4 (miles)	Trail system summits at 3,500 feet; activities include hiking, mountain biking, equestrian uses, trail, dog sledding and cross-country skiing
Mount Si Natural Resources Conservation Area/Little Si	3 miles north of North Bend, off of 432 nd Avenue	8,027	3.8-mile trail on south face of mountain to summit (4,167 foot elevation), scenic outlook at summit/from Haystack Meadow; Little Si includes 2.5 miles of trails to summit
Mailbox Peak and Granite Lakes Trails	Trail heads at east end of Lake Dorothy Road/Middle Fork County Road; trails provide access to National Forest	10 (miles)	Mailbox Peak includes 4.5 miles of trail and summits at 4,500 feet; Granite Lakes 5-mile trail summits at 4,000 feet; activities include hiking, kayaking, hunting, and camping
King County			
Si View Park and Community Center	Near downtown North Bend on Healy Ave.	11	Swimming pool, ball fields, play area

Table 1. Existing Recreational Facilities (cont'd)

Park/Recreation Facility	Location	Size (acres)	Amenities
Cedar River Trail/Snoqualmie Valley Regional Trail System	Burlington-Northern Railroad Corridor, from Rattlesnake Lake, across South Fork Snoqualmie River, under I-90 and west through downtown North Bend	9 (miles)	Gravel, soft surface trail
Rattlesnake Mt. Scenic Area/Snoqualmie Point Scenic Overlook (co-managed with Washington DNR)	Southwest of North Bend, south of I-90	1,875	Trails around Rattlesnake Lake and along Rattlesnake Ledge (to Snoqualmie Point, 3,500 foot elevation) - the area provides opportunities for day hiking, picnicking and boating; natural area
Three Forks Natural Area	2 miles north of downtown North Bend, adjacent to Mt. Si Area	378	Informal trails, natural area
City of Seattle			
Cedar River Watershed	South of I-90 and North Bend	90,546	Limited fishing and shoreline access, informal trails, visitor center, historic exhibit
City of North Bend			
Snoqualmie Point Scenic Overlook	Southwest of Exit 31, below Rattlesnake Mountain	---	Scenic overlook
E.J. Roberts Park	Silver Creek neighborhood, east of downtown	5	Play areas, tennis courts, basketball court, paths
Gardiner-Weeks Memorial Park	North Bend Blvd, east entrance to the City	3	Museums, senior center, information booth, paths, picnic area, parking
Riverfront Property (Francis North Memorial Park)	South Fork Snoqualmie River, across from Gardiner-Weeks Park	4	Undeveloped
William Henry Taylor Park	McClellan Street	1	North Bend Railroad Depot (historical site), meeting rooms, picnic area, section of Tanner Trail
North Bend Athletic Complex	Adjacent to the North Bend Elementary School and Community Park	9	Softball and baseball fields with bleachers, concessions
North Bend Community Park	Adjacent to North Bend Athletic Complex	8	Baseball field, press box, concessions, undeveloped area
Meadowbrook Farm	In City of North Bend and Snoqualmie	460	Open space, undeveloped
Tanner Trail	Burlington Northern Right-of-Way, from Tanner Road/Mill Site (intersection with Snoqualmie Valley Trail) to the North Bend Depot	2 (miles)	Gravel/soft surface path

Table 1. Existing Recreational Facilities (cont'd)

Park/Recreation Facility	Location	Size (acres)	Amenities
Highline School District			
Camp Waskowitz	Southwest of Exit 34 on the South Fork Snoqualmie River.	372	Environmental education center, cabins, dining hall and meeting places.
Private			
Goldmyer Hot Springs	Beyond the end of USFS Road 56, at the confluence of the Middle Fork Snoqualmie River and Burntboot Creek	---	Hot springs
Lutheran Valley Camp	Lake Dorothy Road near intersection with 496 th Ave. SE, south of the Middle Fork Snoqualmie River	---	Private camp
Mount Si Golf Course	Between North Bend and Snoqualmie city limits off of Meadowbrook Road	---	18-hole golf course
Cascade Country Club	On 436 th Ave SE, south of I-90	---	9-hole golf course
Other Non-Protected and Informal Recreation Areas			
Blue Hole	On Middle Fork Snoqualmie River and 6 th Street	---	Swimming, beach, river access, parking
Dikelands	Extending from Gardiner-Weeks Park (upstream and downstream)	---	River access, informal uses

1.1.1 US Forest Service

The Mount Baker/Snoqualmie National Forest and Alpine Lakes Wilderness Area is located to the east of the Upper And Lower Sites. The Mount Baker/Snoqualmie National Forest and Alpine Lakes Wilderness Area, which is managed by the US Forest Service, contains two campgrounds, Denny Creek and Tinkham. These campgrounds are located 18 and 11 miles east of North Bend and do not have existing views of either the Upper or Lower Sites. Trails in the Forest and Wilderness Area that have the potential for some distant views of the Upper and Lower Sites are the Mount Defiance/Mason Lake Trail (No. 1038), Mount Defiance Trail (No. 1009), the Thompson Lake Trail (No. 1009.01), and the McClellan Butte Trail (No. 1015).

As of 1994, total recreation use in the former North Bend Ranger District was estimated at 3.7 million annual recreation visitor days (RVD is an aggregate 12-hour unit of time spent in a particular activity that might span several discrete activity occasions - Redman, 2001)¹. The North Bend and Enumclaw Ranger Districts recently merged to form the Snoqualmie Ranger District. Of the trails that have the potential for views of the Upper And Lower Sites, the most popular (according to 2000 data) are the Mount Defiance/Mason Lake and McClellan Butte trails. Approximately 3,500 people per year hike to Mason Lake (from the trail head off of I-90 Exit 42), and 2,500 visitors hike to the summit of Mount Defiance (same as Thompson Creek). McClellan Butte Trail (also accessed from Exit 42) is the most popular, with 10,000 people hiking the trail annually. There were approximately 15,877 visits to the Denny Creek campground and 9,514 visits to Tinkham campground in 2000 (Redman, 2001).

1.1.2 State of Washington

Olallie State Park and the Twin Falls Natural Area are located to the south of the sites and I-90. The Twin Falls Area includes a trail system (as described in Table 1) that gains elevation on the north face of Cedar Butte. The potential for limited views to the lower elevations of Grouse Ridge are afforded from the Twin Falls Trail. The Mount Si Natural Resources Conservation Area contains approximately seven miles of trails along the southern face of Mount Si and Little Si. The Mount Si trails and summit area (including Haystack Meadow) afford panoramic views of the Upper Snoqualmie Valley that encompass the Upper And Lower Sites. The Iron Horse State Park/John Wayne Trail traverses the southern I-90 corridor from North Bend to Thorp; crossing the north faces of Cedar Butte and McClellan Butte (south of North Bend) and leading over Snoqualmie Pass. The Mailbox Peak and Granite Lakes trails begin at the Middle Fork of the Snoqualmie River (near the end of Lake Dorothy Road) and ascend to high elevations. Granite Lakes ridge (the summit of the Granite Lakes Trail) is managed by the state and extends into the Alpine Lakes Wilderness Area. The Mount Washington trail (to the south of and above Olallie State Park) also provides views of the project sites.

¹ As of the publication date of this document, 1994 recreation visitor information was the most recent data on overall use available from the USFS for the former North Bend/Snoqualmie Ranger District.

These state trail systems are some of the most popular hiking areas in the region. In 2000, it is estimated that a total of approximately 250,000 people visited Olallie State Park² (Rich Benson, March 8, 2000), approximately 72,000 people visited Mount Si (Larry Fry, March 23, 2001)³, approximately 6,700 people visited Little Si (Larry Fry, March 23, 2001), nearly 200,000 people visited Iron Horse State Park/John Wayne Trail (Keith Wersland, March 13, 2001), and an estimated 3,500 people used the Mailbox Peak trailhead (Larry Fry, March 23, 2001). No other recreational use or visitation records are available for state facilities. However, the available data suggest that greater than 500,000 people visit state recreational facilities in the vicinity of the proposed project. General demand for State Parks and Department of Natural Resources winter recreation facilities in the area is described in Appendix H, of this document, under the Washington State Winter Recreation Program.

1.1.3 King County

The Rattlesnake Mountain Scenic Area (co-managed with Seattle Public Utilities) and the Snoqualmie Valley Trail are the most significant County recreation areas in the vicinity of the sites. Both areas include trails that provide views of the Snoqualmie River Valley and the sites, primarily from Rattlesnake Ledge and from the Snoqualmie Valley Trail as it descends towards North Bend. There are no existing views of the sites from the Si View Park and Community Center or Three Forks Natural Area near downtown North Bend. Information on visitor use levels for these recreation areas is not available from King County. Recreational use data for Rattlesnake Lake is not available from King County or Seattle Public Utilities.

1.1.4 City of North Bend

The City of North Bend manages recreational sites within the City limits, and cooperates with King County and state agencies to provide more regional recreational opportunities (see discussion of the *Middle Fork of the Snoqualmie River Valley: River Corridor Public Use Concept Plan* below). Of all city parks in the project area, Snoqualmie Point Scenic Overlook, recently purchased by the City, provides the most prominent views of the Upper Snoqualmie Valley and project sites. The Overlook is located southwest of Exit 31, below Rattlesnake Mountain. The City does not maintain records of recreation use at these facilities. Refer to the Aesthetics Technical Report, Appendix K, for discussion of views from the Overlook.

1.1.5 Private Recreation Facilities

Several private recreation facilities are in the vicinity of the proposed project. Historic Camp Waskowitz (formerly known as Camp North Bend) is located southwest of Exit 34 on the South Fork Snoqualmie River. The camp is used by Highline School District for outdoor education and for planned group activities. The camp was built in 1934 and is 372 acres in size.

² Olallie State Park attendance estimated from total vehicle count (20,543 cars) and average people per car (3.5 people) in June 2000 – a high-use month.

³ Visitor estimates from Larry Fry, Washington Department of Natural Resources, are general and based on windshield surveys and local knowledge.

Valley Camp, a Lutheran camp and retreat center, is about 1/2 mile north of the Upper Site on Lake Dorothy Road near the intersection with 496th Avenue SE, south of the Middle Fork Snoqualmie River. The camp serves about 2,500 people annually for camping, picnicking, and hiking as a retreat center.

Goldmyer Hot Springs is a private hot springs resort beyond the end of USFS Road 56 at the confluence of Middle Fork Snoqualmie River and Burntboot Creek. Mount Si Golf Course, an 18-hole course, is between North Bend and Snoqualmie off Meadowbrook Road. Cascade Country Club, a 9-hole course, is on 436th Avenue SE south of I-90.

2 EXISTING ON-SITE RECREATIONAL FACILITIES

The project sites are currently owned by the Weyerhaeuser Company and have been managed for timber production and mineral extraction. A system of forest roads was developed on the property for timber harvest activity and is kept gated to discourage public access. Other than some unauthorized public use of the area for hunting and shooting, no recreational uses occur on either of the sites.

2.1 PLANNED ACQUISITIONS AND IMPROVEMENTS

2.1.1 Washington State Department of Natural Resources Proposed Acquisitions

The Washington State Department of Natural Resources (DNR) has identified private lands that could be purchased, if available, for conservation and recreation use. The DNR has identified approximately 250 acres along the southern boundary of the Mount Si Natural Resources Conservation Area (NRCA) and approximately 1,500 acres along the northern and eastern boundaries of the Mount Si NRCA. No formal recreational features are currently planned for the identified purchase areas.

Approximately 1,200 acres of private lands have been identified for purchase, if available, by the DNR along the northern, western and southeastern boundaries of the Rattlesnake Mountain Scenic Area. No recreational facilities are currently planned of the identified purchase areas. Views of the project sites will be available from portions of the planned acquisition areas; refer to discussion of The Uplands and Snoqualmie Point Scenic Overlook viewpoints in the Aesthetics Technical Report, Appendix K. These viewpoints characterize the potential visual impacts from the Rattlesnake Mountain Scenic Area.

Middle Fork of the Snoqualmie River Valley: River Corridor Public Use Concept Plan (Phases I and II) (1997)

The River Corridor Public Use Concept Plan would expand on existing informal recreational uses along the Middle Fork Snoqualmie River (accessed by SE Middle Fork Road and SE Lake Dorothy Road), including fishing, kayaking, and hiking. Phase I of the Plan establishes an interjurisdictional conceptual use and management framework for recreational facilities within one mile of the Snoqualmie River (from the mouth of the Valley to Dingford Creek). The planning area is generally bounded by Mount Si to the west, the Alpine Lakes Wilderness to the north and east and I-90 to the south (approximately 170 square miles in size). Phase II outlines actions to implement the framework. The Plan was initiated by the Mountains to Sound Greenway organization, developed by an interjurisdictional committee and citizen and interest group task force, and is being implemented by a River Coordinator (funded by public and private participants).

The City of North Bend officially adopted Phase II of the Plan in December 1998; King County, state and federal agencies, and interest groups are programmatically implementing the Plan as applicable to their respective ownerships. Phase III of the Plan will consist of a watershed analysis conducted by the US Forest Service.

The Plan projects annual facility use levels in the Valley to reach approximately 161,000 visitors in the year 2001 and 194,000 in 2006 (under moderate growth conditions). In light of these findings, the major goals of the plan are to:

- concentrate and limit day and group uses in the Lower and Middle Valley;
- minimize impacts to the River by concentrating recreational uses away from the river;
- develop walk-in only access to the River at suitable scenic or interpretive points;
- maintain primitive camping areas in the Middle Valley and backcountry wilderness of the Upper Valley;
- limit overnight camping to suitable areas;
- move private vehicle access away from the River and other sensitive areas; and
- increase public safety through enforcement control of access to Valley.

Phase I of the Plan identifies the existing forest road system on Grouse Ridge as an opportunity for development of hiking, biking, equestrian activities, and a formal shooting range. Phase II includes the types, scale, character, location and number of facilities recommended for formal development or improvement throughout the Middle Fork River Corridor; none are located on Grouse Ridge or within the lower proposed project site. Those proposed facilities which are in the vicinity of the sites include:

Valley Entry Portal Proposed establishment of a Valley entry point on Washington Department of Natural Resources (WDNR) property where the Middle Fork Road and Lake Dorothy Road converge at the mouth of the Valley. The portal would include an information booth, shuttle stop, trailhead, river access via trail and a residence for a gatekeeper.

Day Use Sites Proposed development of eight sites, approximately two to three miles apart, throughout the Lower and Middle Valley. Most of the locations are already used for informal day use or overnight camping, but have no facilities. Two of the proposed sites, Tanner/Edgewick and the Middle Fork Valley Entry Portal (described above), are within one mile of the sites.

Trails Proposed trails within the River Corridor include the trailhead at the Valley Entry Portal and the Mount Si/CCC Road Trailhead.

Long-term Camping Long-term camping facility would be established at the confluence of Taylor River and the Middle Fork of the Snoqualmie River. The camp would include approximately 70 sites and serve as an access to the backcountry. Proposed locations for dispersed temporary campsites are yet to be determined and would be maintained until permanent facilities are established.

Viewpoints Enhancement of views and landscaping along the Middle Fork River Road.

Phase II of the Plan further identifies projects within City of North Bend limits which compliment the above proposed improvements and/or are important to the success of corridor management. Proposed projects in the vicinity of the sites include:

- A ‘Gateway to the Cascades’ initiative which would encourage equipment sales, rental outfitters, a shuttle/trolley operation to recreation sites, expanded Metro connections, RV parking and camping, and parking areas within the City.
- Development of North Bend River Park (1 mile east of the Mount Si Road) , a river access point, day use area and trailhead.
- Development of ‘Gateway Center,’ a staging area at Exit 34, to provide public information and services, monitored parking, Metro connections, shuttle service to the Valley, RV camping and equipment rental/sales.

3 ENVIRONMENTAL IMPACTS

3.1 CONSTRUCTION IMPACTS

3.1.1 Alternative 1 - No Action

Under the No Action Alternative, no construction activity related to the proposal would occur on the sites. Harvesting of trees on the site would occur in the future, without the proposed project. Compared to the Proposal, indirect recreation impacts from harvesting would be similar to those anticipated from clearing of the land prior to the commencement of mining activity. However the grading activities planned to occur after clearing under the Proposal (removal of the top one foot of topsoil prior to mining operation) would not occur and would not cause further visual impacts to recreational resources in the project area. Refer to discussion of potential visual impacts in the Aesthetics Technical Report, Appendix K.

3.1.2 Alternative 2 – Proposal: Lower and Upper Sites Mining – Exit 34

The phased clearing and construction of processing facilities related to mining generally results in changes in aesthetics and increased levels of noise, dust, and truck traffic. Construction noise impacts on rural properties are exempt from the King County Maximum Permissible Noise Levels during daytime hours. Construction activities under this alternative would not exceed County standards during evening hours or change current background noise levels. Meteorological conditions would periodically disperse noise upward, affecting higher elevation recreation areas (refer to the Noise Technical Report, Appendix D).

Fugitive dust impacts during construction would tend to be of short duration during dry, windy periods and occasionally be a nuisance, but would not pose a health hazard (refer to the Air Quality Technical Report, Appendix C). Truck traffic volumes during construction would be far less than estimated trips during mining operations; however, construction traffic would occur on roads used to access recreation areas in proximity to the sites. Traffic impacts would occur primarily on 468th Avenue SE, Exit 34, and SE Homestead Valley Road and Exit 38 (refer to the discussion of Alternative 2 operation impacts, below, and the Transportation Technical Report, Appendix M).

Construction activities would alter existing views from recreation sites in the project area. Initial clearing of vegetation on the project sites would result in an intensity level similar to those of historical forest practices. Subsequent grading to prepare the sites for mining and the establishment of processing facilities would cause visual impacts to recreation areas in the vicinity. Refer to the Aesthetics Technical Report, Appendix K. The degree to which overall recreational experiences are affected by changes in aesthetics during construction would vary from individual to individual, depending on the expectations, intended activities and perceptions of each individual recreator. Thus, determining the degree of impact to recreation areas and users due to remote changes in aesthetics (changes to aesthetics outside of the boundaries of the recreation area) is subjective and cannot be conclusive in nature. Overall, visual impacts during construction under Alternative 2 would cause recreation impacts to some users. Changes in views of the Upper Site would be more significant as there is less existing development in the surrounding area (the change would be more prominent).

3.1.3 Alternative 2A – Upper Site Mining and Limited Lower Site Mining – Exit 34

Impacts would be similar to Alternative 2.

3.1.4 Alternative 3 – Lower and Upper Sites Mining – Exits 34 and 38

Under this alternative, conditions during clearing of the sites would be the same as under Alternative 2. However, the noise, dust, traffic, and visual impacts associated with site preparation and construction of the aggregate processing facility would be transferred from the Lower Site to the Upper Site. Traffic impacts would occur primarily on 468th Avenue SE, Exit 34, and SE Homestead Valley Road and Exit 38. Pedestrian and bicycle traffic on Homestead Valley Road, 468th Avenue SE and SE 146th Street and vehicle traffic accessing Olallie State Park would periodically be affected by construction traffic.

3.1.5 Alternative 3A – Upper Site Mining and Limited Lower Site Mining – Exits 34 and 38

Impacts would be similar to Alternative 3.

3.1.6 Alternative 4 - Upper Site Mining – Exist 38

Under this alternative, no construction impacts would occur on the Lower Site, and overall impacts to recreation areas during construction would be reduced. The nature of construction impacts on the Upper Site would be similar to those under Alternative 2. However, the magnitude of indirect construction impacts would be less than under Alternative 2. Noise resulting from construction activities under Alternative 4 would be minor (see the Noise Technical Report, Appendix D). No air quality impacts would occur at the Lower Site (refer to the Air Quality Technical Report, Appendix C). Traffic impacts during construction would be similar to those described for the Upper Site area under Alternative 3, affecting pedestrian and bicycle traffic primarily on SE Homestead Valley Road and Exit 38 and affecting recreation users at Olallie State Park. Visual impacts would be similar in nature to Alternatives 2 and 3, but would occur only at recreation sites with views of the Upper Site, primarily trails in the Alpine Lakes Wilderness, Mount Baker/Snoqualmie National Forest, Mount Washington, and Iron Horse State Park/John Wayne Trail.

3.2 OPERATIONAL IMPACTS

3.2.1 Alternative 1 - No Action

Under Alternative 1, no sand and gravel mining for commercial sales or processing activities would occur on the sites. The potential for unauthorized public recreational use of the sites would continue. Harvesting of trees on both the Lower and Upper Sites may continue. Harvesting of trees would generate noise, dust and traffic. Timber harvesting on the sites would occur over a shorter period of time than proposed mining and overall impacts from harvesting activities would be less intense. Tree harvesting would alter the existing view of the sites from higher-elevation areas, but less so than under the Proposal. Alternative 1 would allow the immediate opportunity to develop the improvements identified for the sites in the *Middle Fork of the Snoqualmie River Valley: River Corridor Public Use Concept Plan*. Implementation of the Plan would require landowner approval or purchase of such rights by the public.

3.2.2 Alternative 2 – Proposal: Lower and Upper Sites Mining – Exit 34

The primary impacts on existing recreational facilities can be categorized as either direct or indirect impacts. Direct impacts generally relate to the direct loss of recreational facilities, the creation of new recreational facilities, and the potential to increase demand for existing recreational facilities. Indirect recreational impacts generally relate to the following: increased levels of noise and dust, increased traffic volumes and visual change as perceived from offsite recreational areas; and potential impacts to the overall character of the area.

3.3 DIRECT IMPACTS

The existing status of onsite recreational use and amenities would not change under the Proposal. Access roads to the site would remain gated. When proposed mining activities are completed (approximately 25 years from the start of operation), the sites would be donated to WDNR as permanent public forestland for public recreational use. No direct loss of any formal recreational facilities would occur under proposed mining and processing activities.

Persons employed on the sites could increase the demand for recreational facilities in the area, particularly after work or during lunch hours. However, the increased demand generated by site employees would be relatively small, and impacts on existing recreational facilities are not anticipated to be significant.

Proposed mining and processing activities on both sites would not result in a direct impact on any of the acquisitions planned by DNR in the Rattlesnake Mountain Scenic Area. The Proposal would not directly affect any planned improvements identified in the *Middle Fork of the Snoqualmie River Valley: River Corridor Public Use Concept Plan* (Plan) outside of the proposal site. Improvements suggested in the Plan for Grouse Ridge would not occur during the mining operation.

3.4 INDIRECT IMPACTS

Alternative 2 would not cause significant impacts to air quality or exceed national air quality standards for particulates and emissions (refer to the Air Quality Technical Report, Appendix C). The project's noise levels, in combination with existing background noise, would not exceed King County Noise Code

Standards, including nighttime standards, or impact recreational uses (refer to the Noise Technical Report, Appendix D).

Proposed mining activity would increase truck traffic in the immediate vicinity of the Lower Site. The primary increases in traffic would occur along a portion of 468th Avenue SE, the commercial area near the intersection of 468th Avenue SE and I-90 (Exit 34), and at the on- and off-ramps to I-90 at Exit 34. The increased truck traffic could increase delays to persons traveling to recreational facilities in the vicinity. Traffic conditions under Alternative 2 would affect informal bicycle and pedestrian activity on 468th Ave SE and SE 146th St. Exit 32 and access roads to the Rattlesnake Mountain Scenic Area and Mt. Si Natural Resource Conservation Area would not be affected by project-related traffic. No significant increase in truck traffic on Homestead Valley Road in the vicinity of Olallie State Park or in the vicinity of Twin Falls Natural Area (at Exit 34) would result under Alternative 2 (see the Transportation Technical Report, Appendix M, for additional detail).

Proposed mining activity would result in the conversion of portions of the forested sites to sand and gravel mining and processing for a period of approximately 25 years. When mining activities are completed, the sites would be reforested and transferred to DNR for public use. Proposed vegetated buffers and concealment of the conveyor at and between the project sites would help to mitigate visual impacts from lower elevation recreational areas, such as the Middle Fork Snoqualmie River recreation sites, Olallie State Park, and Twin Falls Natural Area (refer to the Aesthetics Technical Report, Appendix K). Affected views to the sites from recreational areas would primarily occur from higher-elevation areas that have panoramic views including the sites. Recreational areas that afford views of the sites include the following:

- Trails to the summits of the Mount Si Natural Resource Conservation Area, including Haystack Meadow, and Little Si
- Trails within the Alpine Lakes Wilderness Area and Mount Baker/Snoqualmie National Forest (primarily the Mount Defiance, Thompson Lake, and McClellan Butte trails)
- Granite Lakes, Mailbox Peak and Mount Washington Trails
- Twin Falls Natural Area trail
- High-elevation points in the Rattlesnake Mountain Scenic Area
- High points along informal trails in the Cedar River Watershed (if accessed by the public)
- Snoqualmie Valley Trail
- Snoqualmie Point Scenic Overlook

The view of the sites from these higher-elevation areas would be changed from existing conditions, particularly from Mount Si, Mount Washington, Mailbox Peak and Rattlesnake Mountain (including planned Rattlesnake Mountain expansion areas). From many of these higher-elevation areas, including Mount Si, the exposed floor and sidewalls of the proposed mining areas, as well as the proposed processing facilities on the Lower Site, would be visible (refer to the Aesthetics Technical Report, Appendix K, for a visual representation of the view of the sites from Mount Si).

Views of exposed mining areas and processing facilities could detract from the existing overall character of the panoramic views. Proposed phased reclamation would limit the amount of mining area exposed at any one time. However, even with implementation of all proposed measures to minimize visual impacts (such

as vegetated buffers and phased reclamation), exposed mining areas and processing areas would be visible from higher elevations. Because recreational use data is not available for all recreation sites in the vicinity of the project sites, the total number of recreational users affected by aesthetic impacts cannot be accurately determined.

As discussed above, the degree to which overall recreational experiences are affected by changes in aesthetics would vary from individual to individual, depending on the expectations, intended activities and perceptions of each individual recreator. Thus, determining the degree of impact to recreation areas and users due to remote changes in aesthetics (changes to aesthetics outside of the boundaries of the recreation area) is subjective and cannot be conclusive in nature. In general, visual impacts under Alternative 2 would cause recreation impacts to some users. Changes in views of the Upper Site would be more significant as there is less existing development in the surrounding area (the change would be more prominent).

3.4.1 Alternative 2A – Upper Site Mining and Limited Lower Site Mining – Exit 34

As under Alternative 2, the existing status of onsite recreational use and amenities would not change under Alternative 2A. Indirect impacts, including the change in visual appearance of the project sites, as viewed from recreation areas in the project area, would be similar to that under Alternative 2. Overall, recreation impacts under Alternative 2A would be similar to those under Alternative 2.

3.4.2 Alternative 3 - Lower and Upper Sites Mining – Exits 34 and 38

Demand for recreational facilities in the area from employees of the mining operation would be similar to Alternative 2. Alternative 3 would not directly affect any of the acquisitions planned by DNR, or improvements identified in the *Middle Fork of the Snoqualmie River Valley: River Corridor Public Use Concept Plan* (Plan) outside of the proposal site. Improvements suggested in the Plan for Grouse Ridge would not occur during the mining operation.

Under this alternative, indirect recreation impacts from truck traffic in the vicinity of the Lower Site would generally be similar to those for Alternative 2, although the amount of traffic at the Lower Site would be slightly less. For the Upper Site, the additional truck traffic on Homestead Valley Road would increase levels of noise and dust in proximity to Olallie State Park (refer to the Noise Technical Report, Appendix D, and the Air Quality Technical Report, Appendix C). In addition, increased truck traffic at and around Exit 38 would restrict and conflict with pedestrian, bicycle and vehicular movement on SE Homestead Valley Rd., including the entrance to Olallie State Park. (see the Transportation Technical Report, Appendix M, for further discussion). Impacts to offsite recreation uses from visual changes to the sites would be similar to those described for Alternative 2.

3.4.3 Alternative 3A – Upper Site Mining and Limited Lower Site Mining – Exits 34 and 38

Recreation impacts under the Alternative 3 Lower Site Option would be similar to those under Alternative 3.

3.4.4 Alternative 4 - Upper Site Mining – Exit 38

Under this alternative, no mining for commercial sales or processing would occur on the lower site. Direct recreation impacts on the upper site would be similar to those described for the Proposed Action.

Indirect recreation impacts from traffic and visual impacts from mining operations associated with the Lower Site would be eliminated. Indirect traffic and aesthetics impacts from uses on the Upper Site would be the same as those described for the Upper Site under Alternative 2. Increased truck traffic at Exit 38 would conflict with existing pedestrian, bicycle and vehicular movement on SE Homestead Valley Rd., particularly at the entrance to Olallie State Park and the two narrow bridges along that roadway (refer to the Transportation Technical Report, Appendix M, for further discussion). With retention of the Lower Site in existing vegetation, impacts on offsite recreation uses from visual changes to the sites, particularly from higher elevations, would be less than those for Alternative 2. Visual impacts would occur only at recreation sites with views of the Upper Site, primarily including trails in the Alpine Lakes Wilderness, Mount Baker/Snoqualmie National Forest, Mount Washington, and Iron Horse State Park/John Wayne Trail.

3.5 CUMULATIVE IMPACTS

Three mineral extraction sites are located in the area, one adjacent to the proposed Upper Site. Other than the proposal, no additional extraction activities are proposed in the vicinity or within existing recreation areas. No other sites in the vicinity are identified as mineral resources in the King County Comprehensive Plan, although mining is a permitted use within the Forest zone (refer to the Land Use Technical Report, Appendix H).

In general, the project would expand on existing mining activities in the area. Direct recreation cumulative impacts associated with the proposal would not occur. The proposal is not expected to encourage additional mining operations in the area (refer to the Land Use Technical Report, Appendix H). Therefore, indirect cumulative traffic, air, noise, and aesthetics impacts are not expected to affect recreation sites or activities. Mining uses (including the proposed sites and existing mining sites) would comprise a greater portion of the views from high-altitude recreation areas, and continued timber harvesting could further expose the Upper and Lower sites to views from recreational areas. Refer to the Aesthetics Technical Report, Appendix K, for discussion of potential cumulative view impacts associated with the proposed project.

3.6 MITIGATION MEASURES

The following mitigation measures are proposed, and would be implemented under Alternatives 2, 2A, 3, 3A, and 4, as applicable:

- To screen potential views of the sites from recreation areas, naturally vegetated buffers should be retained around the perimeter of both sites as proposed. Refer to the Aesthetics Technical Report, Appendix K, for further discussion of proposed aesthetics mitigation measures.
- Mitigation measures to limit noise impacts are defined in the Noise Technical Report, Appendix D.
- Traffic mitigation measures are listed in the Transportation Technical Report, Appendix M.
- Air quality and dust mitigation measures are defined in the Air Quality Technical Report, Appendix C.

- The project site(s) would be donated to the Washington Department of Natural Resources as permanent public forestland for public recreational use when mining activities are completed.

3.7 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

The Proposal would not result in any direct unavoidable adverse impacts on area recreational uses. Refer to the Aesthetics Technical Report, Appendix K, and the Transportation Technical Report, Appendix M, for discussion of indirect significant unavoidable adverse impacts related to view impacts and traffic on roads that provide access to recreation areas or existing informal recreational uses.